tediselmedical

GLASS PANEL

INSTALLATION MANUAL

Content

1. Manufacturer

Manufacturer: TEDISEL IBÉRICA S.L.

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2. Security information

Important notes in these operating instructions are marked with graphic symbols and signal words.

2.1. Injury risk warnings

Signal words such as DANGER, WARNING or CAUTION describe the degree of risk of injury. The different triangular symbols visually emphasise the degree of danger.

	WARNING	Refers to a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	CAUTION	Refers to a potential hazard which, if not avoided, may result in minor or slight injury.
	DANGER	Refers to an immediate danger which, if not avoided, will result in death or serious injury.
		Risk of finger entrapment

2.2. Warnings of risk of damage

The signal word WARNING describes the degree of risk of material damage. The triangular symbol visually emphasises the degree of danger.

		Damage to surfaces: warns of damage to surfaces due to unsuitable cleaning agents and disinfectants.
	NOTICE	Refers to a potential hazard which, if not avoided, may cause damage to the equipment.

2.3. Additional symbols used in the safety instructions

	Dangerous voltage: warns about electric shocks that can cause serious injury or death.

2.4. Patient environment

The dimensions in the figure below illustrate the minimum extent of the patient environment in an unrestricted area according to IEC 60601-1.

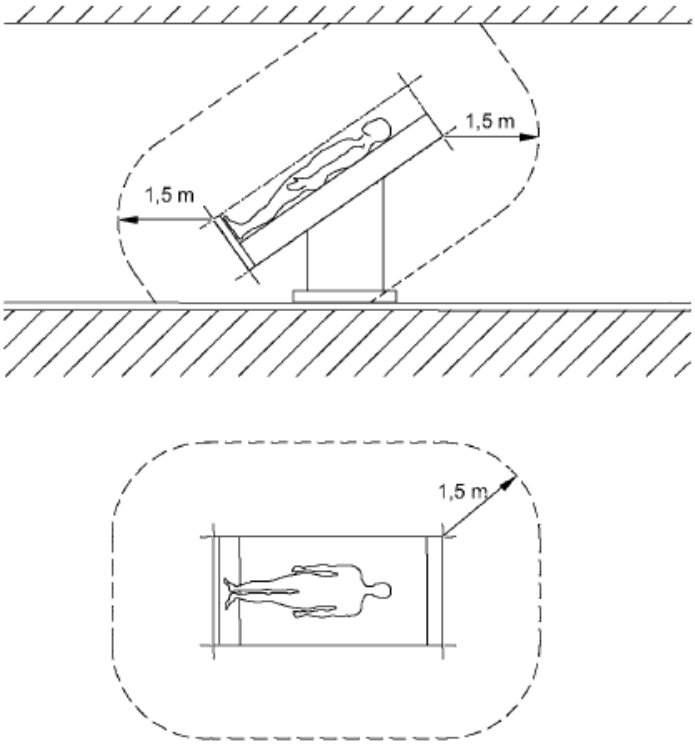


Fig. 1 Minimum extent of the PATIENT ENVIRONMENT

3. Risks

3.1. Risk of front glass opening

CAUTION: If the ball retainers are not properly engaged in their respective holders, the front glass may open if it is pulled.

3.2. Risk of system crash due to poor installation

WARNING: If the fasteners of the individual parts of the system are not correctly positioned or if the tightening torques of the fasteners are not observed, the system may come loose from its fastenings and fall down when the glass front is removed.

3.3. Risk of system crash due to poor pre-frame installation

WARNING: If the pre-frame or internal structure installed in the wall is not able to support the weight of the equipment, the whole system may collapse.

3.4. Danger of electric shock

Signal cables (network, audio, video, etc.) must be electrically isolated from equipment and the ends of building connections to prevent contact with currents that can cause serious injury or death.

4. Symbols used

	Earth (mass)
	Equipotentiality
	Protective earth (ground)
	Connection point for neutral conductor
	Operating instructions
	Waste electrical equipment
	CE symbol
	Product code
	Serial number
	Manufacturer
	Date of manufacture
	Reference to the instruction manual

		Damage to surfaces
		Dangerous tension
	NOTICE	Notice
		Risk of finger entrapment
	WARNING	Warning
	CAUTION	Caution
	DANGER	Danger

5. Installation requirements

5.1. Anchoring on the installation pre-frame. Minimum requirements

DANGER: Failure to comply with this point may result in personal injury.

Hardware for mounting the equipment is not included, the method of anchoring will depend on the existing wall, pre-frame or internal structure. The minimum requirements to be taken into account are:

Model	Weight (P) (Kg)	*Wall cut-out dimensions (W x H x D) (mm)
GLASS PANEL M	35	910 x 730 x 110
GLASS PANEL M+	45	910 x 1060 x 110
GLASS PANEL M++	55	910 x 1390 x 110
GLASS PANEL L	60	1310 x 1060 x 110
GLASS PANEL L+	80	1310 x 1390 x 110
GLASS PANEL XL	70	1510 x 1060 x 110
GLASS PANEL XL+	90	1510 x 1390 x 110

*Tolerances: -0 / + 5mm

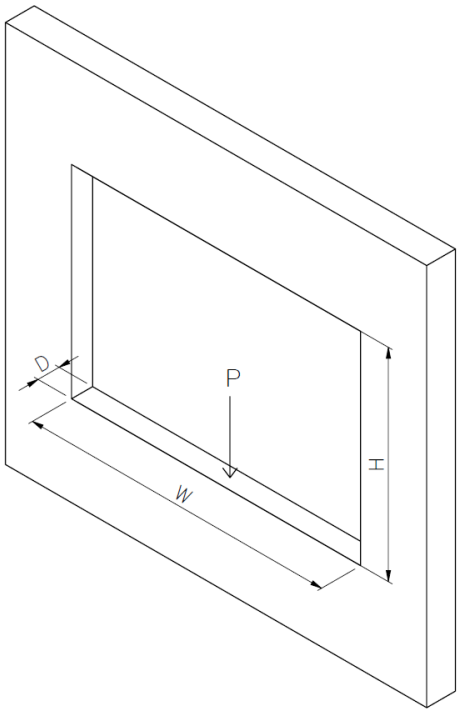


Fig. 2 Hole installation

5.2. Training

The personnel performing the installation must be properly trained and qualified by the customer. The equipment must only be INSTALLED by authorised personnel. Persons who:

1. Have received the training and are duly registered (at those levels where legal provisions make such registration necessary).

2. Have been instructed in the installation of this device by means of this instruction manual as a basis.

3. Are able to assess the tasks they perform on the basis of their own professional experience and training in relevant safety standards and can recognise the potential hazards involved in the work.

6. Installation and connection

6.1. Mounting the panel in the wall hole

The panel ① has to be lifted and facing into the corresponding wall opening ②. Two people are sufficient without the use of an elevator. The cables ③ coming from the installation must be pulled upwards out of the opening before the box is fitted. Once the box has been fitted, the cables can be lowered into the electrical inlets provided in the panel.

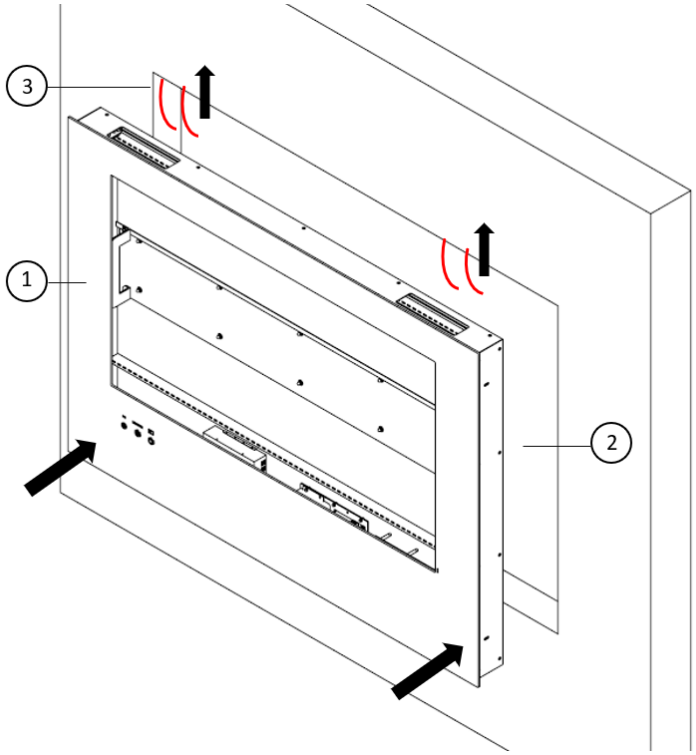


Fig. 3 Installing panel in the wall hole

6.2. Opening the front glass

To open the front glass ①, use 1 or 2 suction cups ②placed in the centre of the bottom, or use the same fingers to pry upwards. On models with aluminium panels (+ models) only the suction cups can be used to open the front glass.

CAUTION: Since the box is not yet secured to the wall opening, it is important to ensure that when you open the glass, you do not pull the entire unit out, which could cause it to fall.

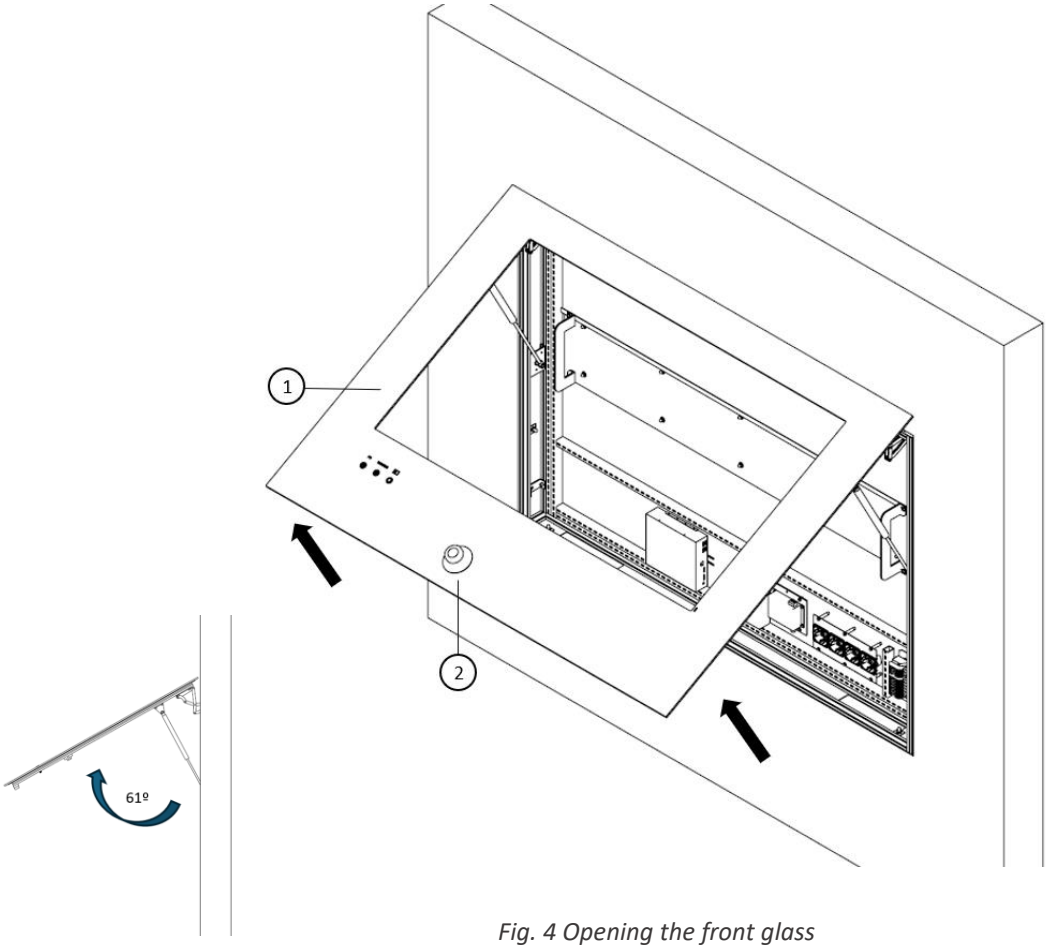


Fig. 4 Opening the front glass

The glass will be unlocked and opened when the ball retainer ① is out of its holder ②. There are a total of 5 ball retainers around the bottom perimeter of the unit. Below is a picture of a ball retainer:

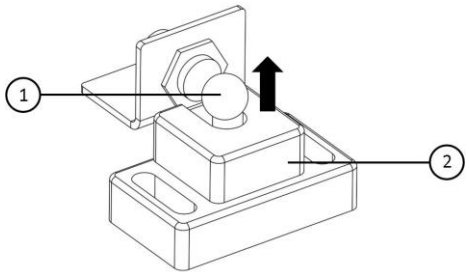


Fig. 5 Ball retainer

6.3. Opening the lower aluminium panel

On models with lower aluminium panel (+ models), the opening of this front plate has to be done after the opening of the front glass. As follows:

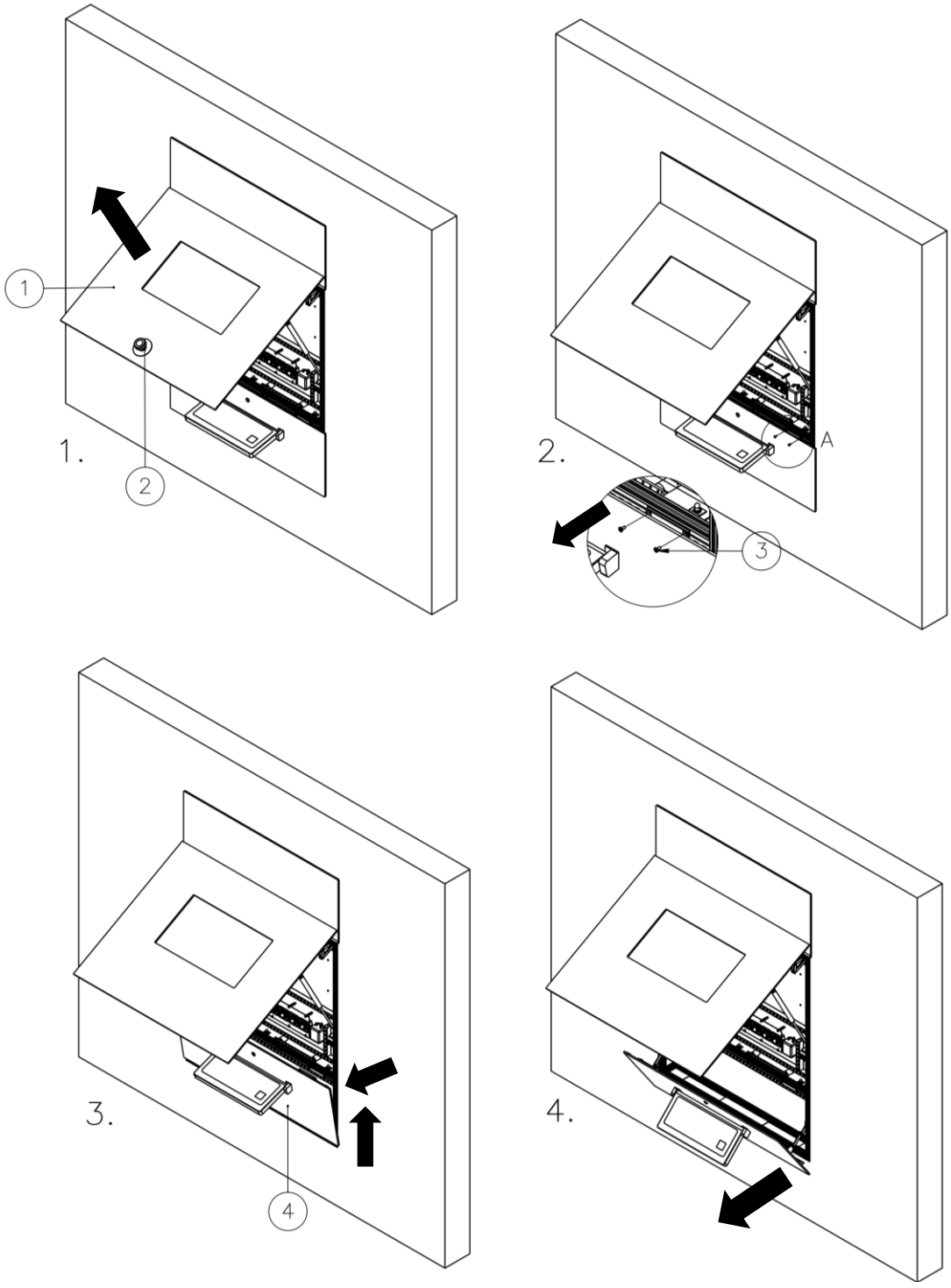


Fig. 6Lower panel opening sequence

1. Open the front glass ① with the suction cup ② as described in the previous point.

2. Remove the countersunk screws ③ securing the lower panel to the structure.

3. Once all the screws have been removed, lift the lower panel ④ upwards, just a little, and then pull it outwards when it is released.

4. Fold down the lower panel to the maximum angle allowed by the installed compasses.

6.4. Remove the upper aluminium panel

CAUTION: Never remove the upper aluminium panel while the front glass is open.

On models with an aluminium top panel (+ models), the removal of the front panel is done in 2 simple steps:

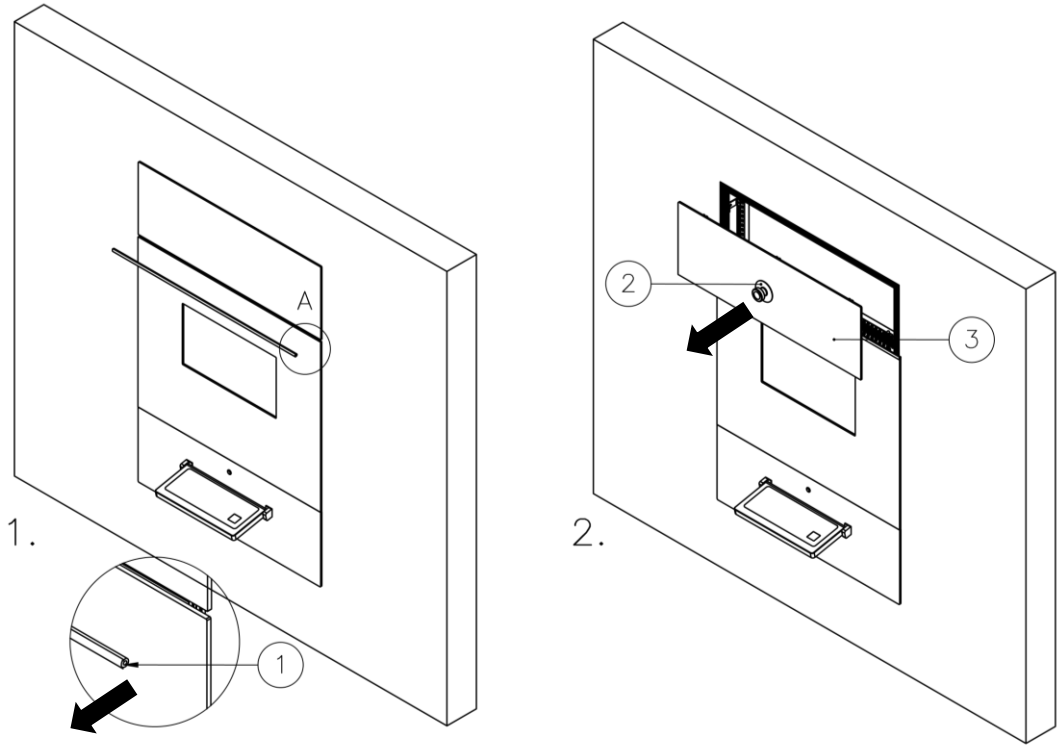


Fig. 7 Removal of top aluminium panel

1. Remove the grey gasket ① placed between the front glass and the upper aluminium panel.

2. Use a suction cup ② to remove the top panel ③. The top panel be unlocked when the balls retainers are out of its holder. There are a total of 6 ball retainers around the perimeter of the panel.

6.5. Fitting recessed box

To fix the equipment there are two or three anchorage points at each the lateral side of the box. The distance of these anchor points is shown in the figure below (Fig.6). Is important not to tighten the fixings definitively until the box is flush with the last wall finish.

CAUTION: It is crucial to ensure that the box is aligned as closely as possible with the final surface of the wall, to prevent potential issues with the folding of the glass and the retention of the front using the ball retainers.

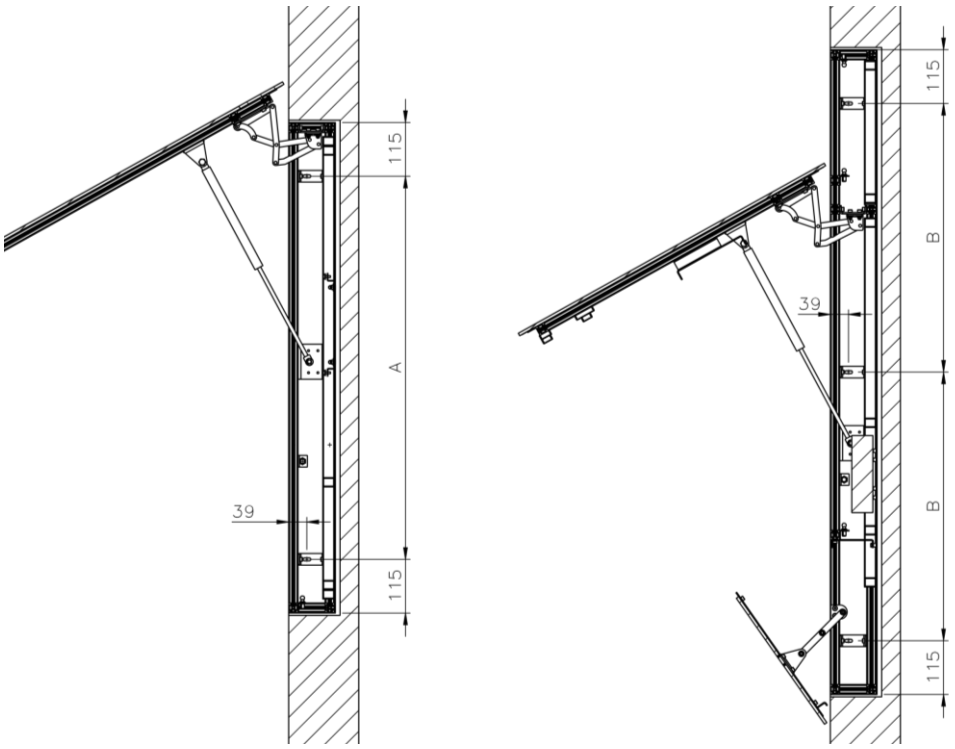


Fig. 8 Anchor points

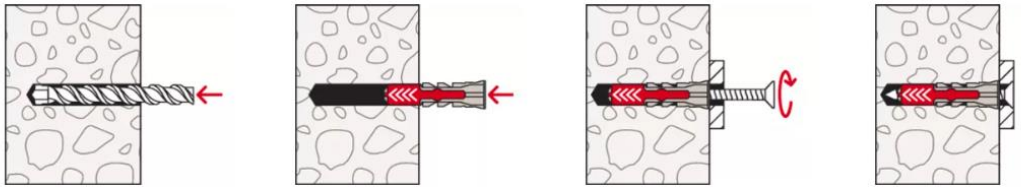
Model	Reference dimension	Distance between anchor points (mm)
GLASS PANEL M	A	490
GLASS PANEL M+	A	820
GLASS PANEL M++	B	575
GLASS PANEL L	A	820
GLASS PANEL L+	B	575
GLASS PANEL XL	A	820
GLASS PANEL XL+	B	575

The type of anchors to be used will depend on the type of reinforcement within the wall. Depending on whether the material is wood, metal or structural wall, the type of anchor to be chosen should be taken into account.

6.5.1. Installation on a masonry wall

The connecting elements to be used when installing GLASS PANEL on a conventional masonry surface are as follows:

Position	Description
1	Screw DIN 571 for 6 mm socket, hexagon head, zinc plated
2	Wide washer DIN 9021 M6 zinc plated
3	Fischer DuoPower Bicomponent Cue



Loads

DuoPower

Highest recommended loads[1] for a single anchor.

The given loads are valid for wood screws with the specified diameter.

Type			5 x 25	6 x 30	6 x 50	8 x 40	8 x 65	10 x 50	10 x 80	12 x 60	14 x 70
Wood screw diameter		[mm]	4	5	5	6	6	8	8	10	12
Min. edge distance concrete	c_{min}	[mm]	30	35	35	50	50	65	65	80	100
Recommended loads in the respective base material F...[2]											
Concrete	≥ C20/25	[kN]	0,40	0,95	1,65	1,10	2,30	2,15	4,20	3,30	5,30
Solid brick	≥ Mz 12	[kN]	0,30	0,50	0,55	0,62	0,69	1,20	1,45	1,30	1,35
Solid sand-lime brick	≥ KS 12	[kN]	0,50	1,00	1,60	1,25	2,25	2,20	3,85	2,80	4,50
Aerated concrete	≥ AAC 2 (G2)	[kN]	0,05	0,10	0,15	0,10	0,16	0,20	0,30	0,24	0,35
Aerated concrete	≥ AAC 4 (G4)	[kN]	0,25	0,38	0,55	0,42	0,60	0,60	1,10	1,00	1,45
Vertically perforated brick	≥ Hlz 12 (ρ ≥ 0.9 kg/dm³)	[kN]	0,13	0,15	0,17	0,25	0,40	0,25	0,40	0,35	0,40
Perforated sand-lime brick	≥ KSL 12 (ρ ≥ 1.6 kg/dm³)	[kN]	0,40	0,60	0,60	0,70	1,00	0,70	2,00	0,75	1,50
Gypsum block	(ρ ≥ 0,9 kg/dm³)	[kN]	0,10	0,18	0,37	0,25	0,50	0,35	0,65	0,50	0,50
Gypsum fibreboard	12.5 mm	[kN]	0,24	0,33	0,35	0,35	-	0,50	-	-	-
Gypsum plasterboard	12.5 mm	[kN]	0,12	0,15	0,15	0,15	-	0,15	-	-	-
Gypsum plasterboard	2 x 12.5 mm	[kN]	0,13	0,15	0,24	0,20	0,32	0,30	-	-	-
Mattone Forato Typ F8		[kN]	0,30	0,30	-	0,25	-	0,25	-	-	-
Tramezza Doppio UNI 19		[kN]	0,15	0,15	0,23	0,15	0,30	0,20	0,52	0,35	0,35
Sepa Parpaing		[kN]	0,30	0,45	0.25[3]	0,45	0.45[3]	0,45	0.45[3]	0.60[3]	0.60[3]

[1] Required safety factors are considered.

[2] Valid for tensile load, shear load and oblique load under any angle.

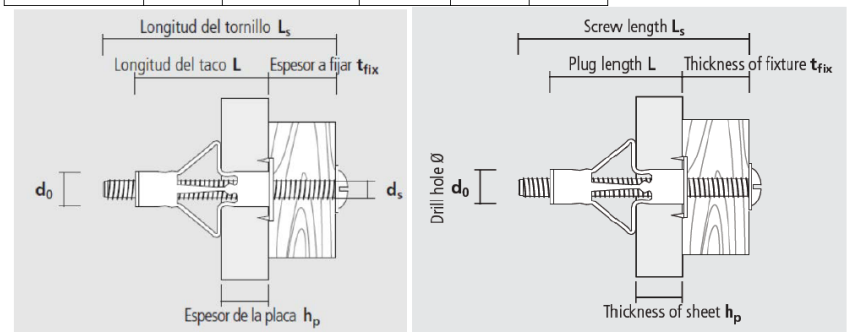
[3] Load determination on plastered wall.

6.5.2. Mounting on plasterboard panels

If the wall is made of plasterboard, it is essential to install an internal bracing structure to ensure proper distribution and support of the specified weight. Such a reinforcement structure can be built using solid or compact timber or steel. In the case of steel, it is recommended to use UPN tubes or profiles with a minimum thickness of 0.6 mm.

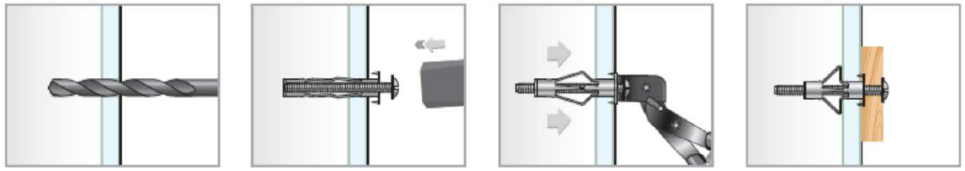
Below is a table with the recommended connection elements when we have an internal structure made of wood:

REF	do [mm]	$h_{p\ min-max}$ [mm]	Rosca- *thread*	Ls [mm]	L [mm]
HRM 4-20	8	3-18	M4	52	46
HRM 4-24	8	18-24	M4	58	52
HRM 4-38	8	32-38	M4	72	66
HRM 5-16	11	3-16	M5	58	52
HRM 5-32	11	14-32	M5	71	65
HRM 5-45	11	32-45	M5	88	80
HRM 6-16	13	3-16	M6	58	52
HRM 6-32	13	14-32	M6	71	65
HRM 6-45	13	32-45	M6	88	80
HRM 8-16	13	3-16	M8	61	53
HRM 8-32	13	16-32	M8	73	66



PROCEDIMIENTO DE INSTALACIÓN / ***INSTALLATION PROCEDURE***

Instalación con pinza / ***Mounting with installation pliers***



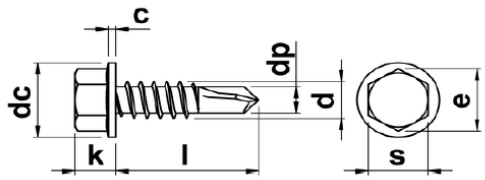
It is crucial to ensure that the diameter of the pre-drilled hole is respected before installing the dowel, as well as the use of zinc-plated DIN 9021 M6 wide washers to guarantee a proper fixing.

With regard to internal steel reinforcements, a table is attached detailing the recommended fasteners to be used:

SELF-TAPPING HEXAGONAL SCREW	DIN-7504K	METRIC

STAINLESS STEEL - AISI 304 | CLASS 70

d	SCREW DIAMETER
dc	FLANGED DIAMETER
dp	TIP DIAMETER
k	HEAD HEIGHT
c	FLANGE THICKNESS
s	DISTANCE BETWEEN SIDES (KEY)
l	SELECTED LENGTH (HEADLESS)



Measurements in millimetres (mm)

d	3,5	3,9	4,2	4,8	5,5	6,3				
dc	8,3	8,3	8,8	10,5	11	13,2				
k	3,45	3,45	4,25	4,45	5,45	6,45				
dp	2,8	3,1	3,6	4,1	4,8	5,8				
c	0,6	0,6	0,9	0,9	1	1				
s	5,5	5,5	7	8	8	10				

It is essential to verify that the wall and anchorages are capable of supporting the weight of the device and the opening force of the glass. This verification is crucial to ensure the safety and proper operation of the panel.

A professional assessment is recommended to confirm the suitability of the wall and anchors prior to installation.

6.6. Electrical inputs situation

The electrical inputs (High voltage) ① are provided at the top and bottom right.

Inputs for video and data signals (Low voltage) ② are provided at the top and bottom left.

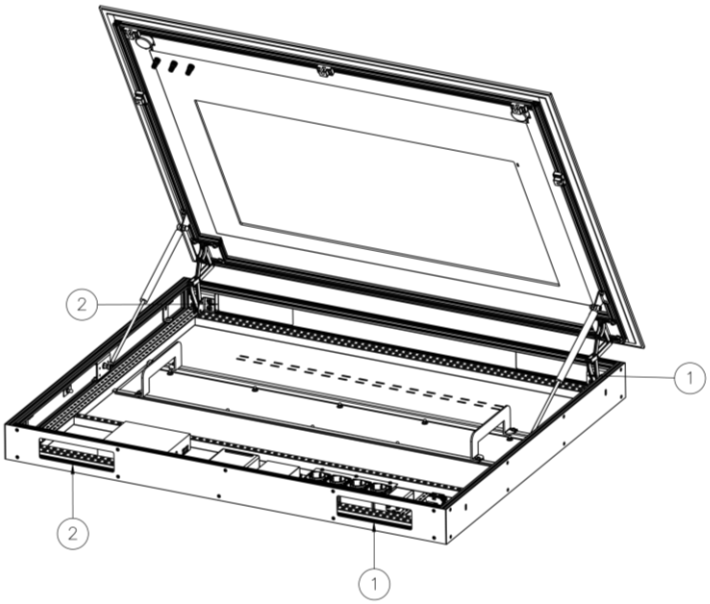


Fig. 9 Electrical inputs

6.6.1. Electrical installation needs

Electrical installation needs will be:

- 1 Power circuit 3x2.5mm^2 – 230V ①. Connection to the terminal block
- 1 Equipotential ground unit circuit: 1x6mm^2 ②. Connection to the terminal block
- 1 Ethernet circuit for PC ③
- 2 HDMI circuits for Monitor (Optional) ④

To avoid the risk of electric shock, the equipment must be connected to a protective earth. Failure to do so may result in personal injury.

DANGER: To avoid the risk of electric shock, the equipment must be connected to a protective earth. Failure to do so may result in personal injury.

The route and input of each electrical circuit within the panel is detailed below (Fig. 10):

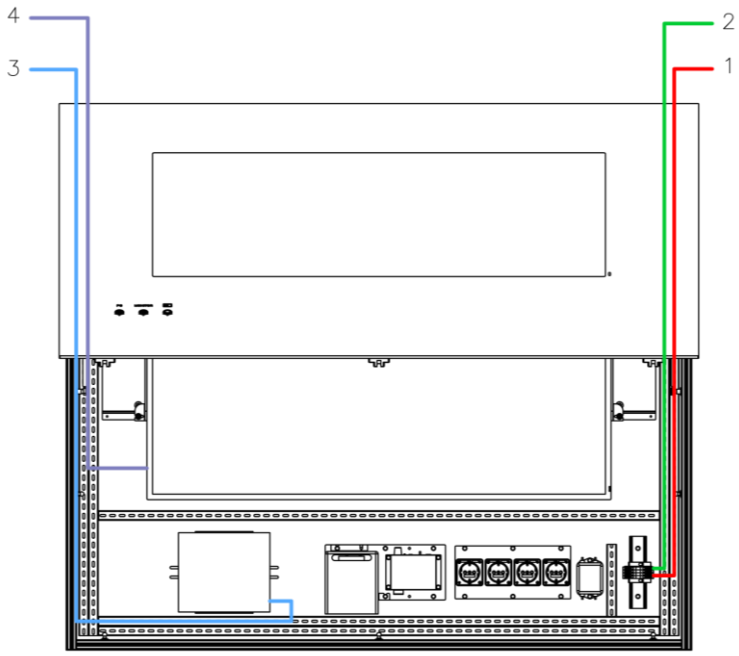


Fig. 10 Wiring routing

A ferrite core (Fig. 11) will be shipped separately for placement in the panel's power supply line ①.

It shall be placed on the supply line coming from the installation in order to attenuate unwanted high frequency signals, thus avoiding electromagnetic interference to other devices and systems.

This filter features the following characteristics:

- Dimensions: 41.6 mm in length, with an applicable cable diameter of Ø10.5 – 12.5mm.
- Electrical Properties:

  Impedance at 25 MHz with 1 turn: 145 Ω (±25% tolerance).

  Impedance at 100 MHz with 1 turn: 265 Ω (±25% tolerance).

  Impedance at 25 MHz with 2 turns: 638 Ω (typical).

  Impedance at 100 MHz with 2 turns: 779 Ω (typical).
- Certifications: Compliant with RoHS, REACh, Halogen-Free according to JEDEC JS709B, and IEC 61249-2-21 standards.
- General Information:

  Temperature during the mounting process: +15 °C to +35 °C.

  Operating Temperature: -25 °C to +105 °C.

  Storage Conditions (in original packaging): < 40 °C; < 75% RH.

  Storage Conditions (for single parts): 15 °C to + 35 °C; 45% to 65% RH.

- Additional Features: Includes a safety key for unlocking.
- Material Specifications:

  Initial Permeability: 4 W 620 (typical).

  Curie Temperature: 620 °C (typical).

  Plastic Housing Color: Grey.

  Plastic Housing Flammability Rating: UL94 V-0.
- Test Cable: AWG26, with a length of 90 mm and a diameter of 10.5 - 12.5 mm.

This ferrite plays a vital role in improving the electrical power quality of the installations by reducing electromagnetic disturbances.

Fig. 11 Ferrite core

6.6.2. Electrical needs for Hermes

When GLASS PANEL is used with Hermes, a complementary electronics box needs to be wired to the panel.

The panel is installed following the previous instructions, including the connection to the main supply.

The electronics box has multiple entries for the main electric supply and the signal wires, as shown in the image below (Fig. 12):

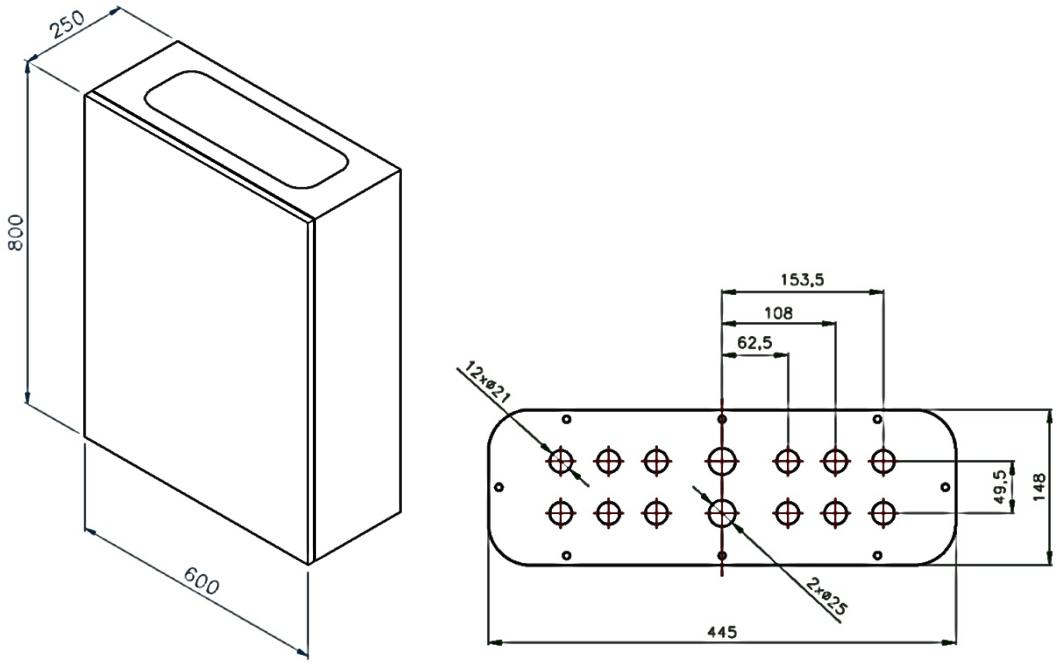


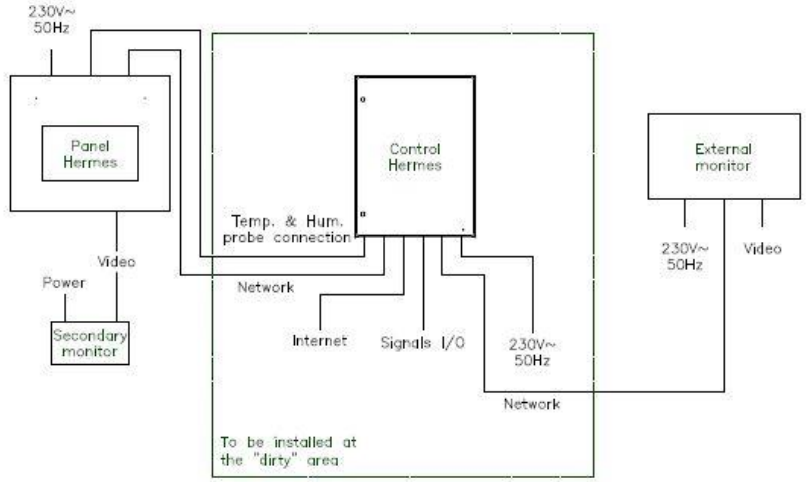
Fig. 12 Electronic Hermes Box

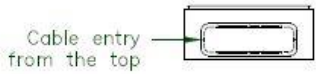
Follow the electrical wiring of your Hermes configuration to make all connections accordingly. The electrical wiring will depend on each specific project.

Communication between the GLASS PANEL and the Hermes box is via a Cat. 7 Ethernet cable. Connect it to the PLC located inside the Hermes Box and to the PC located inside the GLASS PANEL.

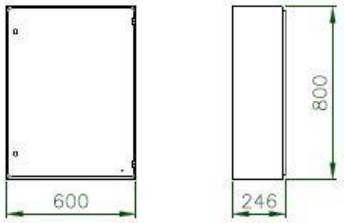
General wiring diagram and installation requirements are attached:

(These needs may be different depending on the project)





Hermes Control Box Dimensions



CONNECTIONS	CABLE
Hermes Panel	
Power supply (230V~ 50Hz)	3x2.5mm²
Equipotential earthing	6mm²
Hermes control box	
Power supply (230V~ 50Hz)	3x2.5mm²
Equipotential earthing	6mm²
Panel network connection	20m data cable – 4 pairs cat.6 with male/male connectors (included)
Panel temperature probe connection	20m data cable – S-STP 4 pairs cat.7 (included)
Internet connection	Data cable – S-STP 4 pairs cat6 with male RJ-45 connector
Signals I/O	
Light control (ON/OFF)	2x1.5mm² for each light to control
Light regulaion (0-10V)	2x0.5mm² for each light to control
Ventilation control (ON/OFF)	2x1.5mm²
Ventilation status (ON/OFF)	2x1.5mm²
Temperature setpoint (0-10V)	2x0.5mm²
Humidity setpoint (0-10 V)	2x0.5mm²
Gas alarm (ON/OFF)	2x1.5mm² for each alarm to repeat
Electrical alarm (ON/OFF)	2x1.5mm² for each alarm to repeat
Room status (ON/OFF)	4x1.5mm²
Secondary monitor (optional)	
Video connection[1]	HDMI to micro HDMI cable
Power supply[1]	Depends on display model
External monitor (optional)	
Network connection[2]	Data cable – S-STP 4 pairs cat6 with male RJ-45 connector
Power supply (230V~ 50Hz)	16A Schuko outlet
Video input	1xVGA; 1xDisplayPort; 3xHDMI

1. Integrated in the panel for QPanel and Diamond+ models
2. The monitor must be configured in the same IP range as the panel. This connection is to control the on/off status and the selected video input from Hermes

6.6.3. Fixed protection system in the installation

Depending on the specific requirements of the installation, the implementation of a fixed protection and disconnection system on the main supply line of the equipment is recommended. This system must ensure the operational safety and protection of the equipment against possible overloads or electrical faults, thus contributing to the integrity and durability of the installation.

To this end, it is essential that the protection system be composed of the following elements:

Circuit breaker: The installation of a circuit breaker with a capacity of 16 A II and a type C tripping curve is recommended.

Differential switch: In addition, a 25 A II differential switch with a sensitivity of 30 mA should be installed. This component is essential for protection against indirect contacts and earth leakage, providing an additional layer of safety for both equipment and users.

The correct selection and installation of these protective devices not only complies with current safety regulations, but also minimises the risk of electrical faults that could compromise the operation of the system. It is the installer's responsibility to ensure that both components are correctly dimensioned and configured in accordance with the applicable technical specifications and standards.

6.7. Monitor installation

On GLASS PANEL models where the monitor is large format, with a size of 32" up to 55", it is shipped separately from the Equipment, and must be installed once the panel is fixed in the installation hole.

When the monitor is not supplied by Tedisel, it must also be fixed afterwards.

The installation of these monitors is explained below.

As for the GLASS PANEL M models, when 20 to 27" touch monitors are installed, they are already installed inside the Equipment, fixed directly to the Front Glass to improve efficiency with capacitive technology.

6.7.1. Vertical Supports assembly

Extract the large format Monitor ① from the packaging and mount the PVC height supplements (x2) ② with the vertical supports (x2) ③, as shown on Fig. 13. Use M6 screws (x4).

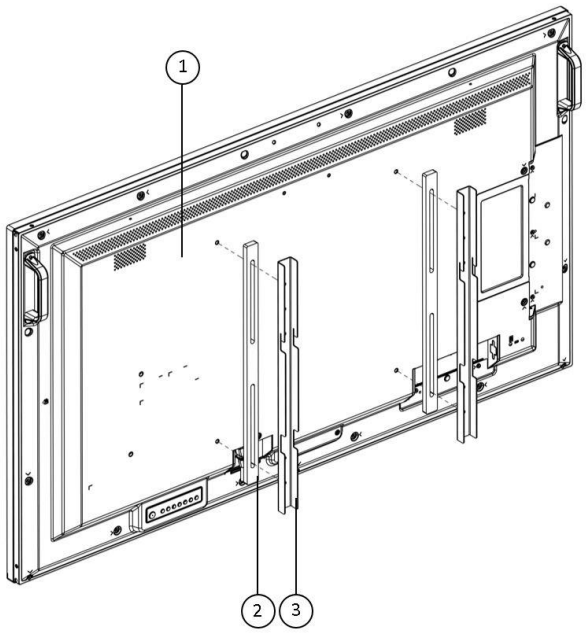


Fig. 13 Vertical supports assembly

6.7.2. Mounting the monitor on the box

The Monitor ① has to be lifted and facing into the corresponding horizontal support ②. Two people are needed. The cables of monitor should be connected before mounting the monitor inside the box.

Both vertical supports ③ must fit correctly on the horizontal support.

The Monitor shall be flush with the box.

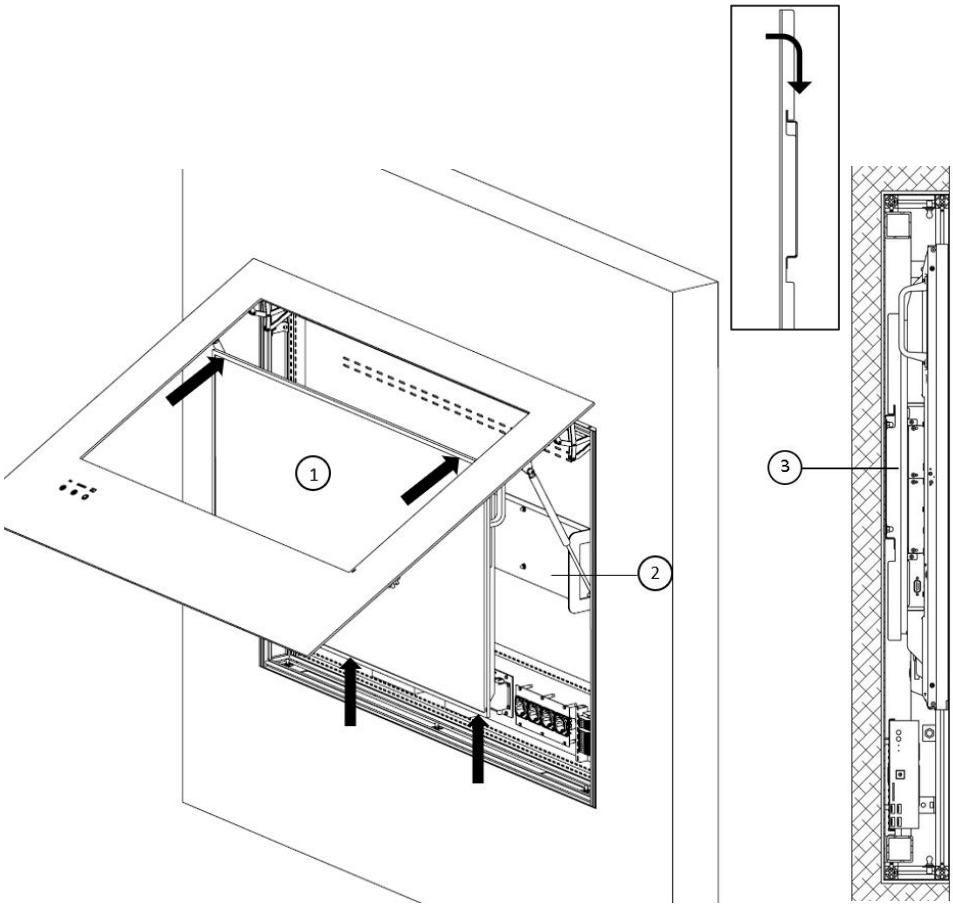


Fig. 14 Monitor mounting

CAUTION: Exercise caution during the installation of the monitor to avoid impacting the glass, particularly its corners, as such impacts can result in significant damage. Ensure that the monitor does not come into contact with the glass in a manner that could cause breakage.

After the Monitor has been installed, it is crucial to ensure that it is accurately centered within the enclosure, aligning with the glass's viewing area. To aid in this centering process, two plastic side stops are provided on the monitor support.

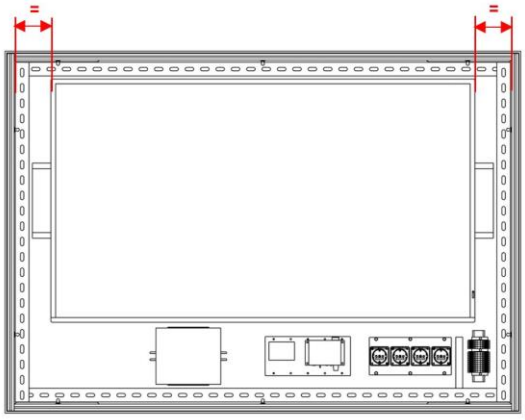


Fig. 15 Monitor centred on the box

6.8. Keyboard mounting

6.8.1. Keyboard 400 with touchpad

The keyboard 400 consists of:

- Keyboard 400 with folding aluminium shelf with 434 x 190 x 24mm dimensions ①
- Wall support ②
- Wall reinforcement support mounting inside the wall (Optional) ③
- M5x25 screws (x4) ④

The order of assembly shall be as follows on Fig. 16:

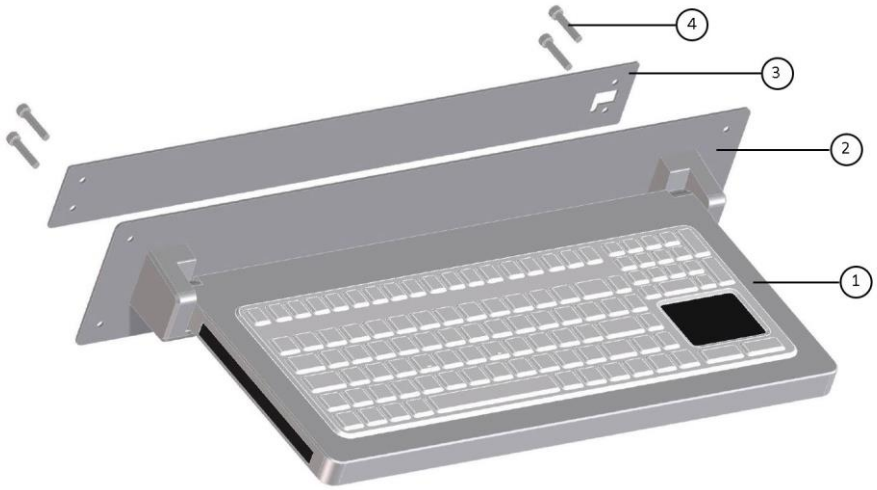


Fig. 16 Exploded Keyboard 400

The dimensions of the wall support plates are as follows:

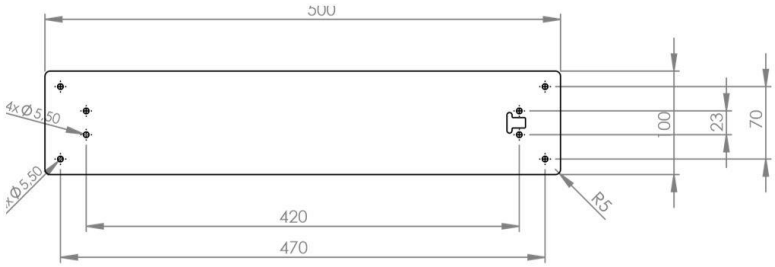


Fig. 17 Wall support plate of Keyboard 400

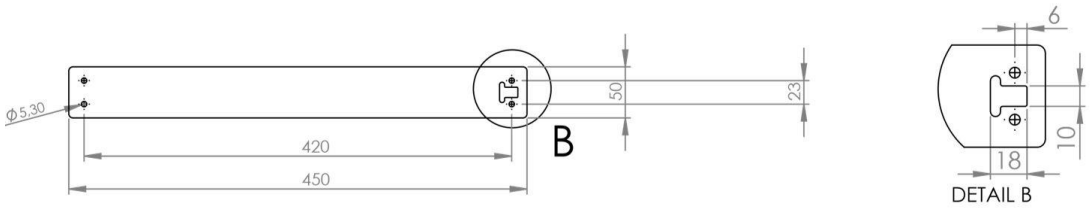


Fig. 18 Wall reinforcement Support plate of Keyboard 400

6.8.2. Keyboard 600 with touchpad and mouse

The keyboard 600 consists of:

- Keyboard 600 with folding aluminium shelf with 634 x 190 x 24mm dimensions ①
- Hold for mouse (Mangetic option is aviable) ②
- Mouse ③
- Wall support ④
- Wall reinforcement support mounting inside the wall (Optional) ⑤
- M5x25 screws (x4) ⑥

The order of assembly shall be as follows on Fig. 19:

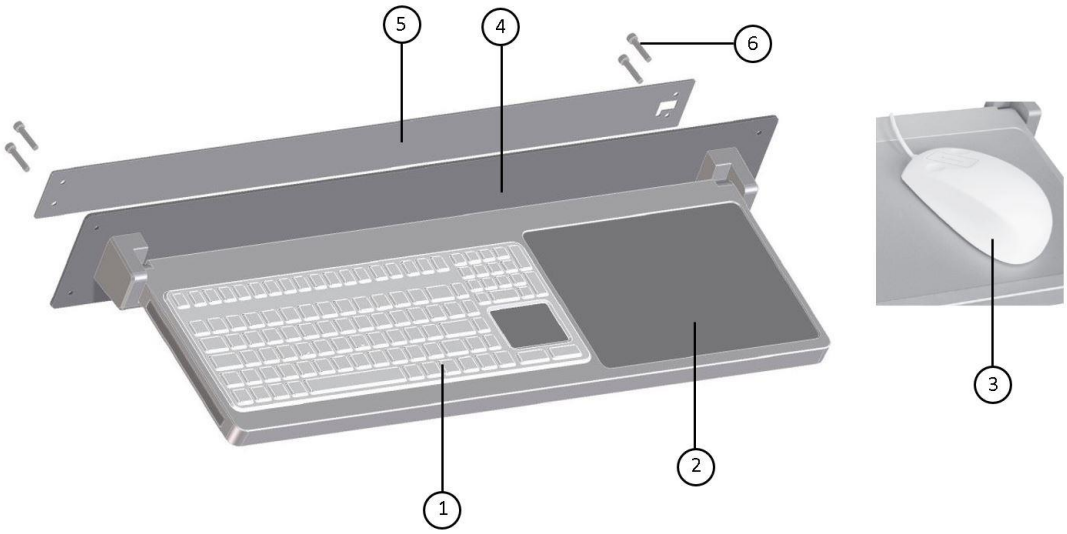


Fig. 19 Exploded Keyboard 600

The dimensions of the wall support plates are as follows:

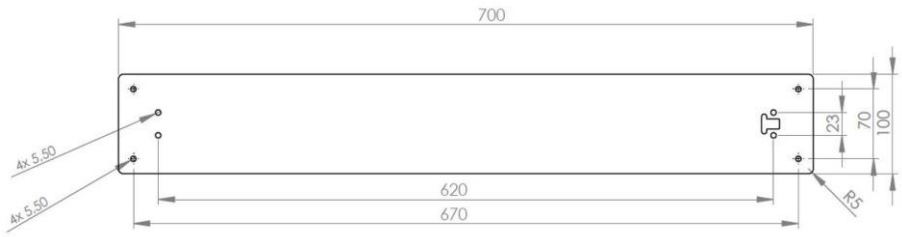


Fig. 20 Wall support plate of Keyboard 600

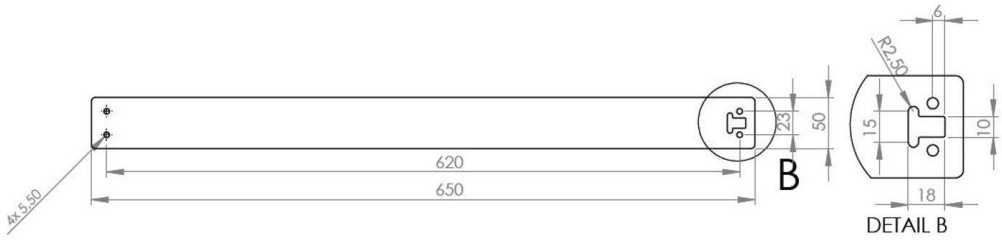


Fig. 21 Wall reinforcement Support plate of Keyboard 600

6.8.3. Connecting Keyboard to the panel

- ① Internal USB cable through the wall. Connection of the keyboard to the PC inside the panel. The cable enters through the lower left-hand entry.
- ② External USB cable. Mouse connection (Optional) to Model 600 keyboard. The cable connects to the side of the keyboard.

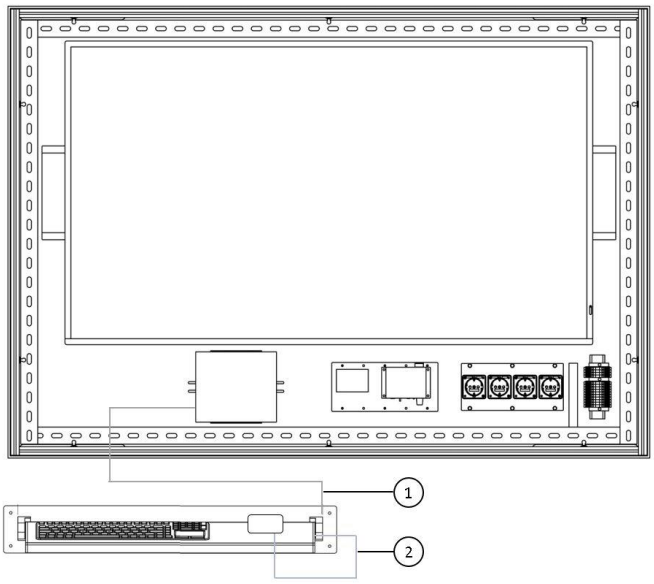


Fig. 22 Connecting Keyboard to the panel

6.9. Closing the Front Glass

The front glass ① must be pressed down from its lower edge until it engages firmly with the ball retainers ②. The glass front has to fit completely into the 5 retainers of the box. Only one person is needed.

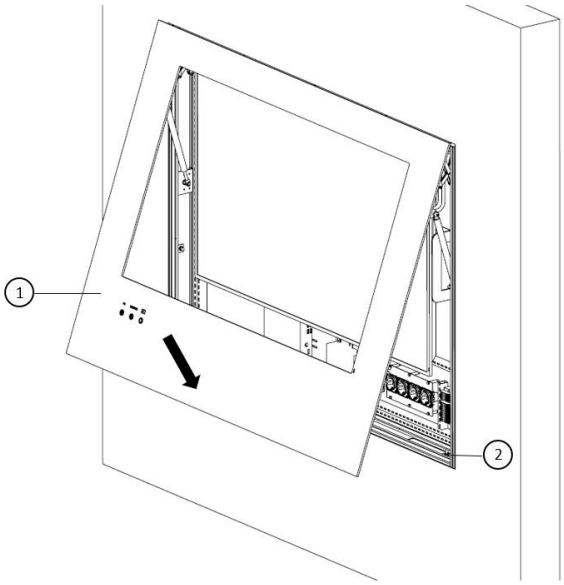


Fig. 23 Closing the front glass

CAUTION: If the ball retainers are not properly fitted in their respective holders, the front glass may open.

Be careful not to get your fingers caught when fitting glass into the retainers.

On models with an aluminium lower panel (+ models), the fixing of this lower front plate must be carried out before closing the Front Glass. By following the reverse steps as detailed in point 6.3. Opening the lower aluminium panel.

See section 6.3 of this manual.

On models with an aluminium upper panel (+ models), the fixing of this upper front plate must be carried out after the Front Glass is fully closed. By following the reverse steps detailed in point 6.4. Remove the upper aluminium panel.

See section 6.4 of this manual.

CAUTION: If the ball retainers are not properly engaged in their respective holders, the upper front plate may fall out.

7. Installation checks

When making adjustments to the equipment, it is necessary:

- Verify that the system is electrically disconnected and take measures to ensure that the system cannot be reconnected.

CAUTION: Failure to comply with this point will cause serious damage.

Before any installation and adjustment work, the equipment must be disconnected from the mains.

7.1. Mechanical test

7.1.1. Anchorage points

It must be checked that each of the anchorage points is properly fixed to internal pre-frame and that there is no displacement of the equipment.

WARNING: Personal injury may result from dropping the equipment.

See section 6.2 of this manual.

7.1.2. Ball retainers

It must be checked that each ball retainer is properly fixed in its support. There are a total of 5 retainers around the perimeter of the front glass.

7.2. Electrical circuit tests

Once the equipment has been installed, power must be supplied to each of the circuits provided and a test must be carried out to check that all the mechanisms provided in the circuit in question, and only these, are supplied with voltage.

- Check continuity of protective earth wiring.

DANGEROUS VOLTAGE: To avoid risk of electric shock, equipment must be connected to a protective earth. Failure to do so may result in personal injury.

8. Waste management

Applies WEE2012/19 and RoHS directive 2011/65/EU, amendment 2015/863/EU. The equipment has electrical and electronic components, so it cannot be disposed of as organic waste, but as electrical/electronic waste.

9. Regulations

9.1. Team ranking

- Class I Electrical Device
- Internal box with IP20 protection level according to IEC 60529
- Glass front with IP65 protection level according to IEC 60529 (Does not apply to + models)

Equipment intended for continuous operation.